

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0139807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ENZYME WAS PURIFIED FROM
PIGEON BREAST MUSCLE, BY REPEATED TREATMENT WITH K PHOSPHATE. THE
PARTLY PURIFIED ENZYME WAS PASSED THROUGH A DEAE CELLULOSE COLUMN, THEN
REFRACTIONATED WITH (NH SUB4)SUB2 SO SUB4. THE PROCEDURE RESULTS IN A
400 FOLD PURIFICATION WITH 10PERCENT YIELD. FACILITY: MOSK.
GOS. UNIV. IN. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.791.053.004.64:669.715

KRYUKOVSKIY, V. N., Candidate of Technical Sciences, NOVIKOV, O. M., Engineer, MESHKOVA, O. V., Candidate of Technical Sciences, and SUSHKOV, V. N., Engineer

"Discontinuities in Welds of Alloy AMg6 in the Presence of Oxide Inclusions"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 25-27

Abstract: The article describes results of a study of the reasons for the formation of discontinuities in welds of alloy AMg6. Weld discontinuities due to the presence of oxide skins can be divided into two types, viz. long ones forming along the axis of the weld (poor fusion) and short ones situated at an angle to the axis of the weld. The first type results from poor preparation of the groove face surface, shifting of the arc relative to the butt, as well as increased butt gap. The second type results from oxidation of the filler wire and groove face surface during welding. For purposes of establishing the quantitative dependence of total discontinuity length on the butt gap size, $500 \times 1/2$

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USSR

KRYUKOVSKIY, V. N., et al., Svarochnoye Proizvodstvo, No 12, Dec 70, pp 25-27

250 x 4 mm plates were welded with a gap of 0.25-3.0 mm. Single-phase and three-phase nonconsumable-electrode argon welding was used. The results indicate that there is a range of butt gap values (1.0-1.5 mm) in which there is a minimum cathode sputtering area and a maximum discontinuity length. This range is wider in single-phase than in three-phase welding. An accelerated single-phase welding regime (increasing the weld rate from 10-15 to 20-25 m/hr with a corresponding increase in the welding current) contributes to more complete breakdown and dispersion of the oxide skins, resulting in over a threefold decrease in the total discontinuity length. The assembly and fixation of weldable elements with a minimum butt gap and the use of accelerated procedure and a three-phase instead of a single-phase arc are recommended to prevent the formation of discontinuities due to oxide inclusions in welds.

2/2

1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--KINETICS OF POTASSIUM, RUBIDIUM, AND CESIUM IONIZATION IN AN
 ACETYLENE AIR FLAME -U-
 AUTHOR-(02)-PGLUEKTOV, N.S., MESHKOVA, S.B. M
 CCUNTRY OF INFO--USSR
 SOURCE--Zh. Fiz. Khim. 1970, 44(1), 56-9
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--IONIZATION, POTASSIUM, RUBIDIUM, CESIUM, CALCULATION, FLAME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3002/1221

STEP NO--UR/0076/70/044/001/0056/0059

CIRC ACCESSION NO--AP0120439
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 033

CIRC ACCESSION NO--AP0128639

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. DEGREE OF IONIZATION OF K, RB, AND CS METALS IN AN ACETYLENE AIR FLAME WAS CALCD. FROM THE DATA OBTAINED BY FOLLOWING THE DEPENDENCE OF INTENSITY OF EMISSION UPON CONC. OF THE METAL ACROSS THE FLAME. THE METALS WERE PRESENT IN CONC. FROM 10 PRIME NEGATIVE4-10 PRIME NEGATIVE3 MU. THE IONIZATION PROCESS REACHES EQUIL. AFTER 10 MSEC FOR CS WHEREAS K AND RB REQUIRE A LONGER TIME.

FACILITY: INST. OBSHCH. NEORG. KHIM., ODESSA, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70
 TITLE--PREPARATION OF CRYSTALLINE XYLITOL FROM COTTONSEED HULLS -U-
 AUTHOR-(02)-SOBOLEVA, G.D., MESHKOVA, V.YA. M
 COUNTRY OF INFO--USSR
 SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970. 23(3), 23-6
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
 TOPIC TAGS--PROCESSED PLANT PRODUCT, POLYHYDROXY ALIPHATIC ALCOHOL,
 CHEMICAL PURIFICATION, ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3007/1983

STEP NO--UR/0328/70/021/003/0023/0026

CIRC ACCESSION NO--AP0137162

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 008

CIRC ACCESSION NO--AP0137162

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PROGN. OF CRYST. XYLITOL IN THE USSR WAS ORGANIZED ON THE BASIS OF RESEARCH DONE AT THE ALL UNION RESEARCH INST. OF PROTEIN SYNTHESIS. XYLITOL IS CRYSTD. FROM SOLNS. PURIFIED ON ION EXCHANGE RESINS AND EVAPD. BECAUSE OF THE HIGH SOLY. OF XYLITOL, VACUUM EVAPN. IS NOT EFFICIENT AND CRYSTN. MUST BE CARRIED OUT BY COOLING OF SOLNS. IN CRYSTALLIZERS. THE QUALITY OF XYLITOL AND ITS YIELD DEPEND ON THE PURITY OF THE SOLNS. AND A HIGH DEGREE OF SOLN. PURIFICATION, SUCH AS IS ATTAINED ON SELECTED ION EXCHANGE RESINS, IS A PREREQUISITE FOR PRODUCING XYLITOL IN GOOD YIELDS AND OF HIGH QUALITY. STUDIES ON THE CRYSTN. PROCESS LED TO DEVELOPMENT OF A PROCESS FOR CONTINUOUS COOLING OF THE SOLNS. AND FOR 2 STAGE CRYSTN., THE CRYSTALS OBTAINED FROM THE LIQUOR OF THE 1ST STAGE BEING RECYCLED INTO THAT STAGE (AT PRESENT, THE DRAINED LIQUOR IS USED FOR THE PRODUCTION OF XYLITAN). BY THIS PROCESS, THE YIELD OF CRYST. XYLITOL FROM COTTONSEED HULLS (A MATERIAL USED IN HYDROLYSIS PLANTS) COULD BE INCREASED TO 9PERCENT. THE OVERALL PRODUCTION IN EXISTING PLANTS AND THOSE PLANNED SHOULD BE 1.5 TIMES THAT ESTD. ON THE BASIS OF THE PRESENTLY USED PROCESS.

UNCLASSIFIED

USSR

UDC 615.357.379.031.814.1.015.4:612.822.3

MESHMAN, V. F. and POKRYSHKIN, V. I., Laboratory of Neuroendocrinal Regulation,
Institute of Normal and Pathological Physiology, Academy of Medical Sciences
USSR, Moscow

"Effect of Microinjections of Insulin Into the Hypothalamus on Evoked
Potentials in the Cerebral Cortex"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 9, 1972,
pp 6-8

Abstract: Injection of 0.025 units/kg of insulin into the posterior and anterior hypothalamus of anesthetized cats altered evoked potentials in different cortical regions. Evoked potentials recorded in the motor and auditory regions in response to electrical stimulation of the satic nerve and clicks, respectively, intensified, but they were inhibited in the visual cortex following light flashes. The heterogeneity of the effects of hypothalamic structures on the cortex was also reflected in the different phases of the evoked potentials which changed more or less independently.

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USSR

ALEKSIDZE, N. G., MESHVELISHVILI, D. F., and BELETSKAYA, R. P., Tbilisi State University

"The Effect of Transamine on Monoamineoxidase Activity and Psychoneurologic Behavior of Rats in a Labyrinth"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

Abstract: Data are found in the literature indicating that biogenic amines. It was of interest therefore, to study the effect of transamine, an inhibitor of MAO, on the psychoneurologic behavior of rats in relationship to the duration and degree of MAO inhibition. Psychoneurologic behavior was studied by the method of free actions in a T labyrinth. The rats were required to remember the location of an open door on the left or the right branch of the labyrinth. and enzymes participating in their metabolism are involved in the memory process. Unfortunately most studies lack an analysis of the interrelationships of animal behavior and enzyme activity. Furthermore, when considering the inhibitory properties of transamine, the activity of monoamineoxidase, MAO, is often not determined.

MAO activity was determined with the spectrophotometer -- acetylcholinesterase activity by the method of Elman et al.

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USSR

ALEKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

approximately 40 minutes after intraperitoneal injection of transamine, psycho-neurologic behavior of rats deteriorated from 9.17 to 5.30 points, a decrease to 58% of control values. By the second day the memory of the rats had improved but remained significantly depressed at 8.25 points (p greater than .001). Forty-eight hours after the injection of transamine, the ability of rats to solve the labyrinth was essentially normal (8.70; p less than 0.5). In parallel with our studies of the behavior of rats in the labyrinth, we investigated the dynamic activity of MAO in various areas of the cortex and sub-cortical white matter of the brain. It was discovered that 40 minutes after intraperitoneal injection of transamine, MAO activity is sharply inhibited in all areas of the brain that were studied. MAO remained inhibited in the 24 hour measurement. The degree of inhibition in the cortical and subcortical areas was practically identical at 40 minutes and 24 hours after the injection of transamine. After 48 hours a tendency toward restoration of MAO activity was noted. It is interesting to note that at 72 hours there is significant restoration of MAO activity in the white matter of the frontal, parietal and occipital areas -- tissue composed of primarily glial cells. It is possible that this recovery is one of the characteristics of the laminar coverage of neurons with

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USSR

ALAKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

glial cells. It should be noted that transamine does not affect acetylcholinesterase activity in the various regions of the rat brain. Disruption of the behavior of rats in the labyrinth coincided temporarily with inhibition of MAO activity. However, 48 hours after the injection of transamine, behavior of rats returned to normal while MAO remained inhibited. In summary, in these experiments with transamine it was not possible to demonstrate a correlation between psychoneurologic behavior and the level of MAO activity in the various areas of the cortex and subcortical white matter of the rat brain.

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Hydraulic

USSR

MESKHI, I. Ya.

"The Sea is Threatening"

Moscow, Ogonek, No 25, 17 Jun 72, pp 26-27

Abstract: Serious erosion occurred along the Black Sea coast of Soviet Georgia in the last few decades. The advancing sea washed out parts of several towns and is threatening others.

It is believed that the increase of erosion is caused by the construction of dams and other works on the rivers flowing into the sea. This upsets the natural balance between the river deposits and erosion.

About one fifth of the coast has been protected by reinforcing concrete walls and breakwaters. These devices were not always successful. The length of the coast subject to erosion keeps increasing.

The experimental work is being conducted by the Black Sea Shore Protection Section of the All-Union Research Institute of Transport Construction. Model basins of sections of coast are in operation.

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MESKHI, I. Ya., Ogonek, No 25, 17 Jun 72, pp 26-27

The progress is handicapped by the large number of agencies involved. This setup lacks the necessary flexibility. It is recommended that a single organization responsible for the shore protection be established.

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Organ and Tissue Transplantation

USSR

UDC 616.831.95-089.843-097

MESHKHIYA, N. SH., PERTSEVA, T. N., AND KHUDAYTOV, I. S., Institute of Neurosurgery imeni K.N. Burdenko, Academy of Medical Sciences USSR, and Laboratory of Tissue Preservation, Central Institute of Traumatology and Orthopedics, Ministry of Health USSR, Moscow

"The Immunological Reaction of the Recipient's Organism to the Homotransplantation of Dura Mater Preserved at a Low Temperature"

Moscow, Voprosy Neyrokhirurgii, Vol 35, No 5, Sep/Oct 71, pp 58-62

Abstract: In experiments conducted on rabbits, homotransplantation of patches of fresh dura mater and of dura mater preserved for 90 days at minus 70° was carried out. The immunological reaction of the organism to transplantation antigens, as indicated by the increase in the weight of the regional lymph nodes and the induced formation in them of immature cells of the lymphoid series of the type that form antibodies, was much less pronounced than that which followed homotransplantation of a skin patch on an ear. Both on grafting of dura mater and of skin, the reaction in the lymph nodes was stronger on the side of the operation than the opposite side. The peak of the immunological reaction, as indicated by the accumulation of immature lymphoid cells in the regional lymph nodes, was equally high on transplantation of dura mater preserved at minus 70° and that of fresh dura

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USSR

MESKHIYA, N. SH., et al., Voprosy Neyrokhirurgii, Vol 35, No 5, Sep/Oct 71,
pp 58-62

mater, but developed on the 8-10th day after transplantation in the first case and on the 6-7th day in the second. The delayed immunogenesis on transplantation of the tissue that had been frozen was presumably due to the longer time that was required for the development of a full-fledged interaction between this tissue and the organism.

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USSR

UDC 621.391.63

AVTONOMOV, V. A., BORISOV, B. S., GRUDININ, A. S., VARLAMOV, I. V., KANDYBA, Pe, Ye., KOLYASNIKOV, V. A., KRASYUK, B. A., MESKIN, S. S., PETRUSEVICH, V. A., POLTORATSKIY, E. A., RAVICH, V. N., and CHICHERIN, L. A.

"High-Speed Optical-Electronic Switch"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, Issue 2(28), pp 3-8
(from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8BJ21)

Translation: An optical-electronic pair is developed, on the basis of which a hybrid microcircuit is produced which assures a high galvanic decoupling and is compatible with respect to the input and output parameters with integrated logic circuits manufactured by domestic industry. 4 ill. 4 ref.
Summary.

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UDC 621.38.836.112.15c24

USSR

BERKOVSKAYA, K.F., KIRILLOVA, N.V., KONAKOVA, R.V., KRASYUK, B.A., ~~NEKIN, S.S.~~
RAVICH, V.N., SOBOLEV, V.I., SHUMAN, V.B.

"Opticoelectronic Pair, Light-Emitting Diode--Photthyristor: New Element Of
Electronic Apparatus"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo
"Sovetskoye Radio," No 4, 1971, pp 216-228

Abstract: The possibilities are analyzed of a new type of opticoelectronic pair, GaAs light-emitting diode--Si photthyristor. The characteristics and parameters are furnished of light-emitting diodes and photthyristors of various types. The possibilities of their optimum combination are considered. Specific regimes of operation are recommended and the parameters of the opticoelectronic pair are presented for three regimes of operation. 6 fig. 3 tab. 8 ref.

1/1

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USSR

UDC: 631.383.3

ICHASHINA, R. S., KUDACHINA, N. Ya., KRASHOR, B. A.,
NEDEL'SKIY, N. P., RAYTCH, V. N., TSARNEKOV, B. V., Moscow Coordinative
Institute, Physicotechnical Institute Imeni A. F. Ioffe, Academy of
Sciences of the USSR, Leningrad

"The Gallium Phosphide Electroluminescent Dynistor"

Leningrad, Fizika i Tekhnika Elektronov, Vol. 5, No 9, Sep 71, pp
1695-1699

Abstract: This paper describes sources of red and green light with an S-shaped current-voltage curve based on epitaxial gallium phosphide PNPN structures -- electroluminescent dynistors. The electrical and electroluminescent characteristics and parameters of these devices are presented, and it is shown that the properties of electroluminescent gallium phosphide dynistors are similar to those of dynistors based on other materials.

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UDC: 681.327.02

USSR

YESHCHIN, K. K., KRASYUK, B. A., MEDVEDEV, N. F., MESKIN, S. M., RAVICH, V. N.,
SOROKIN, A. G.

"A Memory Device"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 28,
1970, Soviet Patent No 280543, Class 21, filed 11 Jan 69, p 40

Abstract: This Author's Certificate introduces a memory device which contains a diode matrix connected to control keys and to a discharge readout amplifier. As a distinguishing feature of the patent, the signal-to-noise ratio is improved by connecting a diode light source and optically coupled photo receiver to each group of diodes in the matrix. The photo receivers are united and connected to the input of the readout amplifier.

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USSR

UDO 621.382:621.383.8 (C88.8)

YESHCHIK, K.K., IGNATKINA, R.S., MEDVEDEV, N.F., MESKIN, S.S., RAVICH, V.N.

"Optical Indicator"

USSR Author's Certificate No 258458, filed 26 May 67, published 25 Apr 70 (from
RZh--Elektronika i yeye primenaniye, No 11, November 1970, Abstract No 11B252P)

Translation: A device is proposed for visual control of voltage. The device is a semiconductor optical indicator, one of the areas of which has at least two ohmic contacts and a fixed resistance per unit length along the p-n junction, and the second accomplished so that the resistance between its contacts and any point of the operating zone decreases, for example along a parabola. Because of this a reduction is achieved of the consumable power, as well as an increase of the degree of contrast of the boundary of the luminous area, which considerably expands the range of application of such devices. 2 ill. G. Zh.

1/1

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1/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70
 TITLE--PARTICIPATION OF INHIBITOR RADICALS IN CHAIN PROPAGATION DURING
 ETHYLBENZENE OXIDATION IN THE PRESENCE OF N-PHENYL BETA-NAPHTHYLAMINE
 AUTHOR--(04)-KARPUKHINA, G.V., MAYZUS, Z.K., MESKINA, M.YA., EMANUEL, N.M.

COUNTRY OF INFO--USSR

SOURCE--Zh. Fiz. Khim. 1970, 44(6), 1377-82

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLBENZENE, OXIDATION, AROMATIC AMINE, ALKYLPHENOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/F07 STEP NO--UR/0076/10/044/005/1377/1382

CIRC ACCESSION NO--AP0140337

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--11DEC79

CIRC ACCESSION NO--AP0140337

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE INHIBITORY ACTIVITY OF N-PHENYL BETA NAPHTHYLAMINE (I) IN THE OXIDN. OF PHET AT 60DEGREES DECREASED WITH INCREASING I CONCEN. THE CONCEN. OF PEROXY RADICALS IN THE REACTION MIXT. BECAME GREATER THAN THE VALUE CALCD. FROM THE RATES OF RADICAL INITIATION, AND OF REACTION OF PEROXY RADICALS WITH INHIBITOR, OR FROM THE CONCEN. OF THE INHIBITOR. THIS WAS DUE TO THE GENERATION OF ADDNL. PEROXY RADICALS BY THE REACTION OF PHET WITH RADICALS DERIVED FROM I. UPON INTRODUCTION OF 2,6-DI-TERT-BUTYLPHENOL, WHICH REACTED WITH THE AMINE RADICALS, THE RATE OF THE SIDE REACTION DECREASED, AND THE CONCEN. OF PEROXY RADICALS APPROACHED THE CALCD. VALUE.
FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Antennas

USSR

UDC: 621.396.670.951

IVANOVA, N. S., BOGDANOV, A. A., MESHOPOV, G. M., OGANOVA, L. A., ZUYEV,
F. K., YEGOROV, Ye. M.

"A Fiberglass-Reinforced Polarization Material"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotki, Novyye Znaki,
No 30, Oct 71, Author's Certificate No 317137, Division H, filed 30 Sep 64,
published 7 Oct 71, p 193

Translation: This Author's Certificate introduces a fiberglass-reinforced polarization material based on textolite for antenna reflectors. As a distinguishing feature of the patent, the weight of the reflector is reduced by adding to the glass-textolite reinforcement a layer of metallized glass fabric which contains metallized glass filaments in one of the directions of its structure (warp or weft). The glass filaments consist of elementary glass fibers coated with a layer of metal (aluminum or zinc) securely bonded to the glass fiber surface.

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1/2 010
 TITLE—REACTIONS OF DIETHYL ALKYLGLYCIOYLMALONATES WITH AMINES —U—
 UNCLASSIFIED PROCESSING DATE—30OCT70
 AUTHOR—(04)—MESROPYAN, E.G., KARAPETYAN, Z.T., AVETISYAN, D.V., DANGYAN,
 M.T. M
 COUNTRY OF INFO—USSR
 SOURCE—ARM. KHIM. ZH. 1970, 23,1, 45-8
 DATE PUBLISHED—70
 SUBJECT AREAS—CHEMISTRY
 TOPIC TAGS—ALKYL RADICAL, AMINE, ALIPHATIC ESTER
 CONTROL MARKING—NO RESTRICTIONS
 DOCUMENT CLASS—UNCLASSIFIED
 PROXY REEL/FRAME—1999/1940 STEP NO—UR/0426/70/023/001/0045/0048
 CIRC ACCESSION NO—AP0123721
 UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 010
CIRC ACCESSION NO--AP0123721

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TITLE ESTERS (I) WERE HEATED
WITH 1 EQUIV. DIALKYLAMINE AND 0.25 EQUIV. H SUB2 O 4 HR AT 40DEGREES TO
GIVE II (R, R PRIME), PERCENT YIELD, B SUBL, N 20 OVER D, AND M. P.

PICRATE GIVEN) SHOWN ON MICROFIGHE.
UNIV., EREVAN, USSR.

FACILITY: EREVAN, GUS.

UNCLASSIFIED

Acc. Nr.: **AP0030994**

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 64-67

CERTAIN IMMUNOCHEMICAL PROPERTIES OF COLD HAEMAGGLUTININS IN THE RABBIT

Mesropyan, N.P.; Kul'berg, A.Ya.

Institute of Epidemiology and Microbiology, Academy of Medical Sciences of the USSR, Moscow

Certain immunochemical properties of cold haemagglutinins (HC) obtained after multiple intravenous immunization of rabbits by stroma of sheep erythrocytes. HC were removed from serum by adsorption on stroma at 0° with its subsequent elution at 37°. Purified HC have haemagglutination reaction with sheep erythrocytes and bound specifically the complement at low temperature. It was found that HC contained antibodies

mk

a

REEL/FRAME

19691020

Acc. Nr.: **AP0030994**

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 64-67

CERTAIN IMMUNOCHEMICAL PROPERTIES OF COLD HAEMAGGLUTININS
IN THE RABBIT

Mesropyan, N.P.; Kul'berg, A.Ya.

Institute of Epidemiology and Microbiology, Academy of Medical Sciences of the USSR,
Moscow

Certain immunochemical properties of cold haemagglutinins (HC) obtained after multiple intravenous immunization of rabbits by stroma of sheep erythrocytes. CH were removed from serum by adsorption on stroma at 0° with its subsequent elution at 37°. Purified HC have haemagglutination reaction with sheep erythrocytes and bound specifically the complement at low temperature. It was found that HC contained antibodies

mk

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REEL/FRAME

19691020

1/2 023 UNCLASSIFIED PROCESSING DATE--30 OCT 70
 TITLE--OXIDATIVE CHLOROPHOSPHORYLATION OF LOW MOLECULAR WEIGHT WASTES FROM
 POLYETHYLENE PRODUCTION --U--
 AUTHOR--(03)-ZHUBANOV, B.A., HESSERLE, YE.P., MANSUROVA, R.M.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 48-52
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, MECH., IND., CIVIL AND MARINE ENG.
 TOPIC TAGS--POLYETHYLENE, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL REACTION
 RATE, OXIDATION, PHOSPHORYLATION, INDUSTRIAL WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1999/1916

STEP NO--UR/0380/70/0101/00487001

CIRC ACCESSION NO--AP0121700

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE: 11/11/01

2/2 023

CIRC ACCESSION NO--AP0123700
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. LGN/MOL., WT. POLYETHYLENE GLYCOL
RESIDUES WERE DISSOLVED IN HOT PCL SUB3. THE PASSAGE OF II OR MIX
THROUGH THE SOLN. GAVE CHLOROPHOSPHORYLATED I, WHICH, WITHOUT
ISOLATION, WAS HYDROLYZED WITH ICE WATER TO I POLYMERIZABLE ACID
CONTG. SMALLER THAN OR EQUAL TO 18.5P. BESIDES CH SUB2 GROUPS
CH SUB2 GROUPS, II ALSO CONTAINED CH1CLCHPO(OH) SUB2 GROUPS RESULTING
FROM THE DIRECT ADDN. OF PCL SUB3 TO CH:CH GROUPS OF I. THE REACTION
HAD NO INDUCTION PERIOD AND IT WAS ZERO ORDER. THE REACTION RATE
DEPENDED ON THE RATE OF BUBBLING OF D THROUGH THE REACTION MIXT.
FACILITY: INST. KHIM. NAUK. ALMA-ATA, USSR.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--30DCT70

TITLE--POLARIZABILITY OF BENZENE IN GROUND AND EXCITED STATES -U-

AUTHOR--(03)--LUZANOV, A.V., MALYKHANOV, YU.B., NESTECHKIN, N.M.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 836-8

DATE PUBLISHED-----70

M

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE, GROUND STATE, EXCITED STATE, ELECTRODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1121

STEP NO--UR/0051/70/028/004/0836/0338

CIRC ACCESSION NO--AP0124776'

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--300CT70

2/2 013

CIRC ACCESSION NO--AP0124776
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. PERTURBATION THEORY AND THE HARTREE FOCK MENTIONED WERE APPLIED FOR THE CALCN. OF THE POLARIZABILITY OF BENZENE IN THE GROUND AND EXCITED STATES. THE CALCD. VALUE FOR CHANGE IN POLARIZABILITY ON EXCITATION AGREED WITH THE EXPTL. VALUE, CONFIRMING THE BASIC ASSUMPTION THAT SIGMA ELECTRONS DO NOT CONTRIBUTE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
 TITLE--EXCITED STATES OF ALTERNANT HYDROCARBONS IN A MO LCAO
 APPROXIMATION. II. SINGLET AND TRIPLET ABSORPTION SPECTRA OF CONDENSED
 AUTHOR--(03)-MESTECHKIN, M.H., GUTYRYA, L.S., POLTAVETS, V.H.
 COUNTRY OF INFO--USSR
 SOURCE--OPT. SPEKTROSK. 1970, 38(3), 454-61
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS
 TOPIC TAGS--EXCITED STATE, MOLECULAR ORBITAL, NAPHTHALENE, ANTHRACENE,
 AROMATIC HYDROCARBON, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
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UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 020

CIRC ACCESSION NO--AP0140273
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE HO LCAO CALCNS. SUGGESTED PREVIOUSLY (M. AND G., 1969; H., 1959) WERE APPLIED TO NAPHTHALENE, ANTHRACENE, TETRACENE, PYRENE, PERYLENE, PICENE, 1,2-BENZOPIRENE, PHENANTHRENE, CHRYSENE, 1,2:5,6-DIBENZANTHRACENE, 1,2-BENZANTHRACENE, AND 1,2:10,11-DIBENZOPERYLENE; THE ENERGIES OF THE SINGLET AND TRIPLET ELECTRONIC TRANSITIONS ARE TABULATED. THE THEORETICAL VALUES WERE CORRELATED WITH THE POSITIONS OF THE MAIN ABSORPTION BANDS AND WITH THE TRIPLET TRIPLET ABSORPTIONS. THE ACCURACY OF THE CALCNS. ARE 0.1-0.2 EV.

UNCLASSIFIED

USSR

UDG 621.317.3:621.3.084 (089.8)

YEGOROV, G.P., KALININ, A.N., LUK'YANENKO, A.I., MESTECHIN, YA. I., SHUBEN, L.V.

"Device For Investigation Of Electron Streams"

USSR Author's Certificate No 263753, filed 22 Apr 66, released 24 June 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A127P)

Translation: The device proposed for investigation of an electron stream contains a vacuum chamber with an electron gun, and differs from known devices of this type by the fact that the vacuum chamber is combined with additional vacuum chambers. This assures identical vacuum conditions in the process of measurement of one and the same electron stream by various measuring elements. The electron gun can turn around the axis of the vacuum chambers for successive settings as compared to the respective additional vacuum chambers, and it can also move along the axis of the additional vacuum chambers with the aid of a special device. 2 ill. G.B.

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MESTIASHVILI, M.G.

SO: JFAS 53378

16 JUNE 71

UDC: 616.895.0

PECULIARITIES OF SET, THEMATIC AND ATHERMATIC APPERCEPTION IN SCHIZOPHRENIA

Article by F.M. Kontridze, M.G. Mestiashvili, S.V. Tsolodze, Institute of Psychiatry (Inst. M.H. Asatiani), Georgian Ministry of Health, Tbilisi; Moscow State University, Faculty of Psychology, Moscow, U.S.S.R. (Submitted 15.05.71). *Psichologiya*, No. 5, 1971, pp 15-17.

Investigation of personality deals with different aspects but, at the same time, it must be noted that the pathopsychological and pathopsychological findings of the last few years indicate that personality cannot be considered as the aggregate of different mental functions. It is something that is an entity. The link between different mental functions and the environment is mediated by the entire personality, and this determines the structural uniqueness of behavioral acts in the broadest sense. Therefore, the position is definitely valid that mental disease is not a pathology of some individual function rather than it is a disorder of the integral personality.

The choice of adequate investigations is very important in the study of personality manifestations under pathological conditions. From this point of view, we have to consider popular methods in psychology and psychiatry such as the method of fixed set, according to D.N. Uznadze, and so-called projection (or projection) methods.

Clinico-experimental observations indicate that one of the chief conditions for adaptation to the environment is set, or the condition that precedes action. Set, according to D.N. Uznadze, is the initial reaction to a situation. Need and the corresponding objective conditions are the chief factors in initiation of set. In the case of repeated exposure to extrinsic stimuli, set may be fixed, assuming the form of so-called fixed set.

In the course of evolutionary formation of higher nervous activity it underwent a number of qualitative changes; for example, while in animals set is formed through instincts and appears thereafter in the form of automated behavior, which is what creates an "impulsive" or "sturdy" plan of mental life, in man it is formed at the abstraction level, this higher level of set is characterized not only by the presence of a situation but also categories of ideation, by social and moral principles.

Lasers/Masers

USSR

UDC 621.373:530.145.6

BOGDANKEVICH, O. V., ZVEREV, M. M., MESTVIRISHVILI, A. N., NABIEV,
A. S., PECHEROV, A. N., SVINENKOV, A. I., PELOBEYEV, R. P.

"A High-Power Semiconductor Maser With Electron Beam Pumping"

V sb. Kvant. elektronika (Quantum Electronics--collection of works),
No 2, Moscow, 1971, pp 92-93 (from EZh-Radiotekhnika, No 7, Jul 71,
Abstract No 7D113)

Translation: To increase the power of a semiconductor maser with elec-
tron beam pumping, the authors study multielement structures of gallium
arsenide and cadmium sulfide. An emission power of 1.5 mW is achieved
when a semiconductor maser on gallium arsenide is excited by an electron
beam with an energy of 300 keV and a current of 300 A. Two illustra-
tions, bibliography of five titles.

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USSR

UDC 621.378.35

BOGDANKEVICH, G. V., ZVEREV, M. M., ~~MESTVISHVILI, A. B.~~, HASELOV, A. S.,
PECHENOV, A. N., SVINENOV, A. I., FEDOSEYEV, K. P.

"A High-Power Semiconductor Laser With Electron-Beam Pumping"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 92-93

Abstract: Multiple-element structures of gallium arsenide and cadmium sulfide are studied for the purpose of increasing the power of a semiconductor laser with electron-beam pumping. An emission power of 1.5 kW is achieved when a gallium arsenide semiconductor laser is stimulated by a beam of 300 keV electrons at 300 A. Two figures, bibliography of five titles.

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USSR .

LOGUNOV, A. A., ~~MESTVIRISHVILI, M. A.~~, and KHRUSTALEV, O. A., Institute of High-Energy Physics

"Restrictions on the Behavior of the Elastic and Inelastic Cross-Sections at High Energies. II"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 2, Nov 71, pp 153-189

Abstract: The first part of the article, dealing with the short-range action of nuclear forces and restrictions on the behavior of the elastic and inelastic cross-sections, considers the effective interaction radius, restrictions on the behavior of the cross-sections, the equality of the total interaction cross-sections of particles and antiparticles at high energies, and restrictions on the behavior of the total interaction cross-sections at high energies. The second part of the article, on the basis of the condition of unitarity and analyticity, obtains conclusions regarding the behavior of the differential multiple-production cross-section with energy growth in the wide production angle region. Topics covered in the second part include the

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USSR

LOGUNOV, A. A. et al, Teoreticheskaya i Matematicheskaya Fizika,
Vol 9, No 2, Nov 71, pp 153-189

Integral representation, inverse integral representation, the upper bound of the amplitude of the inelastic process with fixed projection of moment, the upper bound of the decrease in the differential inelastic cross-section in the wide-angle region at high energies, the sensitivity of the bounds of the multiple-production cross-section to the dimensions of the analyticity region for variables $\cos \theta$ and ω , the Kinoshita-Loeffell-Martin representation, and the evaluation of the differential elastic back-scattering cross-section.

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Nuclear Physics

USSR

LOGUNOV, A. A., ~~MESTVIRISHVILI, M. A.~~, and KHRUSTALEV, O. A. Institute of High Energy Physics, Academy of Sciences of the USSR.

"Restrictions on the Behavior of the Cross Sections of Elastic and Inelastic Processes at High Energy" (Part 1)

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 1, Oct 71,
pp 3-43

Abstract: Present day theory of strong interactions at high energies differs considerably from its parent theory -- the quantized field theory of the middle fifties. The main reason for this discrepancy was the failure of perturbation theory, the only working tool of the field theory at the time, in the description of strong particle interactions. While applied successfully to the exchange of single particles, it proved to be completely inadequate in situations involving strong interactions where emission of many mesons was as equally probable as emission of a single meson.

The purpose of the present work was to stress the importance of inelastic processes, essential for understanding dynamics of interactions at high energy. General properties of the differential cross section processes of multiple

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USSR

LOGUNOV, A. A., Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 1, Oct 71, pp 3-43

production were studied as functions of one or two angular coordinates. Scattering amplitudes were investigated for their analytic properties in both elastic and inelastic processes as functions of scattering angles and as functions of the impulse transfer. The latter case was studied on the basis of the general principles of field theory. It was shown how the range of analyticity (depending on $\cos-\theta$) of the differential cross section of an arbitrary inelastic process can be expanded, making it possible to obtain restrictions on the behavior of the inelastic cross section of differential forward scattering at high energy. The character of the dependence of a partial wave on the orbital moment within the range of high values of the moment was appraised.

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Theoretical Physics

USSR

YEZHELA, V. V., LOGUNOV, A. A., and MESTVIRISHVILI, M. A., Institute of High-Energy Physics

"Unitary Condition and Decrease in Differential Cross-Section of Multiple Production Process With Energy Increase"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 6, No 1, Jan 71, pp 42-54

Abstract: The article studies the differential cross section of multiple production $d\sigma/d \cos \Theta d\varphi$, where Θ is the angle of escape of particle C_1 relative to the direction of the relative momentum P of colliding particles in the center-of-mass system and φ is the angle between planes passing through vectors P , P_{C1} and P_{C2} . For this purpose use is made of the integral expression

$$F_m(s, \cos \Theta, \xi_1) = \frac{1}{2\pi i} \oint_{\Gamma} \frac{dz}{\sqrt{R}} \frac{G_m(s, \xi, \xi_1)}{z^{|m|}} \left(\cos \frac{\Theta}{2} + \sin \frac{\Theta}{2} \cdot z \right)^{|m|}$$

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USSR

YEZHELA, V. V., et al., Teoreticheskaya i Matematicheskaya Fizika,
Vol 6, No 1, Jan 71, pp 42-54

where

$$t = \frac{z - \cos \theta - \sqrt{R}}{i \sin \theta}, \quad R = z^2 - 2z \cos \theta + 1,$$

for the amplitude of the inelastic process. This expression is a generalization of the integral expression for scattering amplitude obtained by KINOSHITA-LOEFFEL-MARTIN (Phys. Rev., 135B, 1464, 1964). In the particular case in which the projection of a moment equals zero the integral expression changes to the KINOSHITA-LOEFFEL-MARTIN expression.

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USSR

YEZHELA, V. V., et al., Teoreticheskaya i Matematicheskaya Fizika, Vol 6, No 1, Jan 71, pp 42-54

On the basis of the above integral expression it is shown, by means of the condition of unitarity and analyticity, that the multiple production cross section decreases with energy increase, and the upper bound of its decrease is found: viz.

$$\frac{d\sigma_{\text{inel}}}{d \cos \theta d\varphi} \leq \frac{\text{const}}{s} \frac{\ln^{12}(s/s_0)}{(\sin \theta)^6 (\sin \varphi)^6}$$

The unitarity condition is an important element for obtaining the above inequality. To obtain the upper bound it is assumed, in using the unitarity condition, that the partial waves making a contribution to the multiple production process reach saturation.

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USSR

YEZHELA, V. V., et al., Teoreticheskaya i Matematicheskaya Fizika,
Vol 6, No 1, Jan 71, pp 42-54

The authors thank N. N. BOGOLYUBOV, G. O. VOLKOV, S. S.
GERSHTEYN, R. M. MURADYAN, N. I. OKSAK, YU. G. STROGANOV, G. L.
RCHEYLISHVILI, A. N. TAVKHELIDZE, and O. A. KHRUSTALYEV for fruit-
ful discussions.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--INTENSIFICATION OF THE PICKLING OF TRANSFORMER STEEL -U-
 AUTHOR--(104)-AKSENOV, V.I., SEREBRYAKOV, G.V., MESYANEV, YU.R., KAPLAN,
 N.I.
 COUNTRY OF INFO--USSR
 SOURCE--METALLURG, MAR. 1970, (3), 30
 DATE PUBLISHED----MAR 70
 SUBJECT AREAS--MATERIALS, CHEMISTRY
 TOPIC TAGS--TRANSFORMER STEEL, PICKLING, METAL CLEANING, HYDROFLUORIC
 ACID, SULFURIC ACID
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY ROLL/FRAME--2000/0922
 CIRC ACCESSION NO--4P0124583
 UNCLASSIFIED
 STEP NO--UR/0130/70/000/003/0030/0030

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UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 014

CIRC ACCESSION NO--AP0124583
ABSTRACT/EXTRACT--(U) GP-0-

PICKLING TRANSFORMER STEEL WHICH ELIMINATES SI DEPOSITS IS DESCRIBED.
THE METAL IS TREATED IN AN HF-H₂SO₄ Mixture FOR 10-20 MIN AT
55-60DEGREESC. THIS PROCESS ENTIRELY ELIMINATES THE LOSS OF METAL
PREVIOUSLY SUFFERED AS A RESULT OF THE DEPOSITS AND IMPROVES THE OUTPUT
OF THE METAL FINISHING DEPARTMENTS AS A WHOLE. POSSIBLE FURTHER
REFINEMENTS TO THE PROCESS ARE CONSIDERED.

UNCLASSIFIED

MESYATZ G. A.

ACCELERATOR ENERGY

Approved for Release by NSA on 05-08-2014 pursuant to E.O. 13526
Reference: Moscow, No. 7, 1974, pp. 78-84

JPRS 60553
28 November 1973

Programs in the study of elementary particles is already continuing with the introduction of new types of accelerators. Experiments in high energy physics are aimed at the investigation of processes taking place in the collision of particles sped up in the accelerators with the nuclei of atoms. The higher the energy of the particles, the more information can be obtained. The Serpukhov accelerator, the world's largest, operates up to the energy of 70 billion eV.

Important information on processes occurring between interacting particles can also be obtained using leptons, namely high energy electrons. The nature of deflection or scattering of electrons allows a judgment about the distribution of electric and magnetic fields in the particles. At the linear accelerator at Stanford (USA) electrons are sped up to the energy of 21.5 Bev. Unfortunately, the number of particles accelerated to high energies is usually small and their current is millions of 1 or less amperes.

Accelerators are employed not only for scientific investigations in nuclear physics. In medicine and biology, for example, the influence of neutrons on organisms is studied with their help. Accelerators are used in industrial technology for non-destructive testing of apparatus, irradiation of thick-walled objects and materials in special buildings for radiography and many other fields.

For all these purposes one employs mainly electron accelerators: betatrons, microtrons, linear accelerators and their analogs. The energy and the cost of installation. Usually installations are smaller when their beam is in electron energy from 1 to 20 Mev and a current from hundreds of microamperes to whole amperes.

UDC 621.375.82

USSR

BAKSHT, R. B., BYCHKOV, Yu. I., MESYATS, G. A.

"Possibility of Using Vapor Formed Under the Effect of a Powerful Electron Beam on a Target as a Means of Obtaining Coherent Radiation"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 89-90 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D931)

Translation: The possibility of obtaining metal vapor under the effect of a powerful electron beam on a target formed during pulse vacuum breakdown is discussed. The optimal parameters of such a beam (10^8 watts/cm² with an energy of 100-200 kiloelectron volts) permit the expenditure of an energy equal to the sublimation energy on evaporating one atom. Discharge to the vacuum diode of the storage element with an energy of 450 joules offers the possibility of obtaining a vapor concentration of no less than 10^{17} cm⁻³ in a volume of 20 cm³. The vapor formed can be used as a means of generating radiation.

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USSR

KRINBERG, N. A., METAFONOV, G. K.

"Estimating the Influence of Inertia and Viscosity on the Motion of an Electron-Ion Gas Along the Magnetic Field of the Earth in the Stationary Approximation"

X Vses. Konf. po Rasprostr. Radiovoln. Tezisy Dokl. Sekts. 8 [Tenth All-Union Conference on Propagation of Radiowaves, Theses of Reports, Section 8 -- Collection of Works], Moscow, Nauka Press, 1972, pp 84-89, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B230).

Translation: The equations of motion of an electron-ion gas along a force line of the magnetic field of the earth can be written as

$$\frac{\partial V}{\partial t} + V \frac{\partial V}{\partial s} = - \frac{1}{Mn} \frac{\partial}{\partial s} (n(T_e + T_i)) - \frac{1}{3} \frac{1}{Mn} \frac{\partial}{\partial s} \left(n \frac{\partial V}{\partial s} \right) + g_s - \frac{e}{M} nV \quad (1)$$

where n is the concentration of electrons, equal to the total concentration of all types of ions, V is the velocity of motion of the electron-ion gas

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USSR

KRINBERG, N. A., METAFONOV, G. K., X Vses. Konf. po Rasprostr. Radiovoln. Tezisy Dokl. Sekts. 8, Moscow, Nauka Press, 1972, pp 84-89.

along the magnetic field, T_e and T_i are the temperatures of electrons and ions (in units of energy), M is the mean mass of an ion, N is the concentration of neutral particles, c is the coefficient of friction, g_s is the projection of the acceleration of the force of gravity in the direction of the magnetic field, η is the coefficient of ion viscosity. The change in the relative role of individual terms of equation (1) with altitude is estimated by the authors, assuming approximately $\partial/\partial t \approx 1/\tau$, $\partial/\partial s \approx 1/\lambda$ (where τ is the characteristic time of the process, λ is the characteristic scale of change of plasma parameters along the line of force) and using tabular data on values of the main parameters of the plasma at the base ($h \approx 3 \cdot 10^2$ km) and top ($h \approx 10^4$ km) of the force tube.

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M

WDC 621.391

USSR

GORODNICHIN, N. T., ZAKRASNYANYI, F. D., KOTOV, P. A., METAL'NIKOV, N. I.,
TSVETKOV, V. A.

"A Device for Forming an 'Interrogate' Signal in Nonredundant Code"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6,
1970, p 31, patent No 262153, filed 6 May 68

Abstract: This Author's Certificate introduces a device for forming an "interrogate" signal in nonredundant code in discrete data transmission systems with resolving feedback. The device contains a switching unit, two flip-flops, a frequency-halving divider, a frequency divider for division by seven, a memory cell, an error detection unit and an output transmitter relay. As a distinguishing feature of the patent, high reliability is assured in reception by connecting the outputs of the frequency-halving divider to the two inputs of the first flip-flop, connecting the outputs of the first flip-flop to the inputs of the output transmitter relay, and connecting the output of the transmitter relay to the input of the switching unit. The first output of the frequency divider for division by seven, which corresponds to the first cycle, is connected to the first input of the second flip-flop, while the second output, which corresponds to the third cycle, is connected to the input of the memory cell. The second input of the memory cell is connected to the output of the error detection unit, and the output

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USSR

GORODNICHIN, N. T., et al, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 6, 1970, p 31, patent No 262153, filed 6 May 68

is connected to the second input of the second flip-flop. The first and second outputs of the second flip-flop are connected to the inputs of the switching unit.

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AA0046289

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

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241524 TRANSDUCER OF VOLTAGE INTO PULSE FREQUENCY
 consisting of capacitor 1, transistor,
 discharge block 4 voltage divider 6 and battery 7.
 Input potential from block 8 charges the capacitor
 to a level balancing the potential on block 6. The
 capacitor discharges through block 4 producing an
 output pulse across resistor 5. The frequency of
 the pulse sequence is related to the input voltage.
 7.3.68. as 1224245/18-10. V.F.TARASOV et al.
 (10.9.69.) Bul.14/18.4.69. Class 21e. Int.Cl.G01k.

V

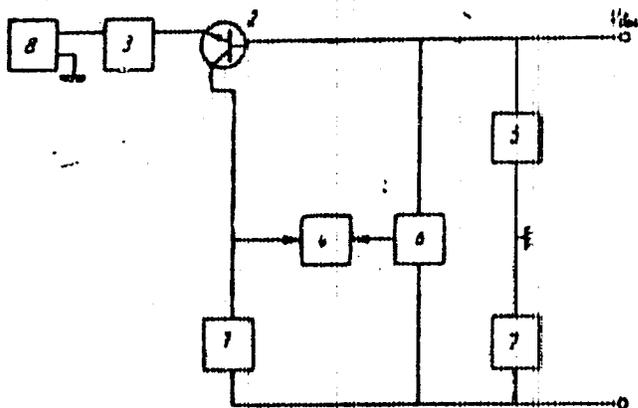
AUTHORS: Tarasov, V. F.; Tikhonov, V. F.;
Metal'nikov, V. V.

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19781443

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19781444

UDC 621.313.12-251.002.3:669-419.4]:539.4

USSR

METASHOP, L. A., Candidate of Technical Sciences, and STOLYAROVA, L. I.,
Engineer

"The Strength of Bimetallic Disks at Elevated Temperature"

Moscow, Vestnik Mashinostroyeniya, No 7, June 1972, pp 14-16

Abstract: Results are presented of research on the strength of welded bi-metallic disks, which form the elements of a generator rotor. It is shown that the elastoplastic calculation of a homogeneous disk is applicable to the strength evaluation of disks of this design. The results of the described project are being used at the All-Union Scientific Research Institute of Electromechanics in the designing of high-speed contactless electric generators. 2 tables. 5 figures. 6 references.

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USSR

METELEV, V., All-Union Institute of Experimental Veterinary Medicine"The Toxicity of Sevin"

Moscow, Rybovodstvo i Rybolovstvo, No 5, Sep/Oct 70, p 17

Abstract: Sevin (1-naphthyl-N-methyl carbamate) is now used extensively as a pesticide. In view of the fact that sevin may get into bodies of water, its toxicity to fish was determined. CL_{50} for carp yearlings was found to be 28.8 (24-34.5) mg/l (S-1.26), 28.5 (24-34) mg/l (S-1.24), and 27.7 (23-33.2) mg/l (S-1.20) on exposure for 24, 48, and 72 hours, respectively. The sensitivity of fish to sevin decreased in the order *Leucaspis delineatus* > perch > roach > loach > crucian carp (*Carassius carassius*) > carp. In poisoning with sevin, the fish were paralyzed. Sublethal concentrations of sevin lowered the erythrocyte count by 25.7%, increased the percentage of monocytes, polymorphonuclear leukocytes, and neutrophils by a factor of 2.5, 1.9, and 8, respectively, and reduced the percentage of lymphocytes by a factor of 1.4. In chronic poisoning of fish (exposure to 2.85 or 1.90 mg/l for 60 days), the erythrocyte and leukocyte counts, as well as the hemoglobin content, decreased by a factor of 1.5-2. Cholinesterase and peroxidase activity decreased. The best method for the detection of sevin is by a rapid drop test proposed by the All-Union

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USSR

METELEV, V., Rybovodstvo i Rybolovstvo, No 5, Sep/Oct 70, p 17

Institute of Experimental Veterinary Medicine (Zhavoronkov, 1967). For quantitative determination of sevin in fish (or in water after extraction with chloroform), a colorimetric method described by Zhavoronkov and Ryzhkov in 1967 was applied. The presence of sevin in water can also be observed directly, since water containing sevin assumes a violet-blue tinge after standing for 3-4 days. In the body of a fish, sevin is present in the highest concentrations in the liver and kidneys.

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1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPARATIVE ASSESSMENT OF METHODS FOR ISOLATING BENZONAL IN
CHEMICAL AND TOXICOLOGICAL STUDIES -U-
AUTHOR--METELEVA, YE.V.

COUNTRY OF INFO--USSR

SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 58-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BENZENE DERIVATIVE, BARBITURATE, ORGANIC ACID, BIODEGRADATION,
HYDROLYSIS, CHROMATOGRAPHY, SPECTROPHOTOMETRIC ANALYSIS, TOXICOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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STEP NO--UR/0466/70/019/001/0058/0062

CIRC ACCESSION NO--AP0119701

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119701

ABSTRACT/EXTRACT--(U) G²-0- ABSTRACT. ETOH-CHCL SUB3, 1:1 IS RECOMMENDED FOR EXTN. OF BENZONAL (1, BENZOYL, 5, PHENYL, 5, ETHYLBARBITURIC ACID, I) IN FORENSIC MEDICAL ANAL. THE RECOVERY OF I WAS EQUIVALENT; SIMILAR 9.96PERCENT. THE LOW RECOVERIES OF I ARE CAUSED BY HYDROLYTIC DECOMP. IN THE BIOL. MATERIAL, OR ARE LIMITED BY THE LOW SOLY. IN WATER. I AT LOW CONTENTS (10-5 MG I, 100 G OF ORGAN) IS COMPLETELY DECOMP. IN 24 HR IN PHENOBARBITAL (II) AND IN BORIC ACID (III). FOR EXTN. OF I FROM ORGANS A MODIFIED PROCEDURE OF GRUSZ HARDAY (1965) WAS USED. III WAS IDENTIFIED AFTER SUBLIMATION FROM H SUB2 SO SUB4 AS CRYSTALS, AND SPECTROPHOTOMETRICALLY. THE EXTS. CONTG. I AND II WERE CHROMATOGRAPHED ON THIN LAYER OF SILICA GEL KSK IN THE SYSTEM CHCL SUB3, ME SUB2 CO (1:1) AND DETECTED, BY SPRAYING WITH SOLNS. OF DIPHENYLCARBAZONE AND HGSO SUB4, AS BLUE VIOLET SPOTS ON A LIGHT VIOLET BACKGROUND. THE R SUBF OF I IS 0.55-0.60, AND OF II 0.33-8. I AND II WERE IDENTIFIED IN ADDN. AFTER ELUTION FROM UNSPRAYED CHROMATOGRAMS AS CRYSTALS, OR SPECTROPHOTOMETRICALLY AFTER ELUTION WITH ET SUB2 O, OR WITH PH 10 BUFFER. FACILITY: MOSK. MED. INST. IM. SECHENOVA, MUSCOW, USSR.

UNCLASSIFIED

UDC: 621.165.175.001.5

USSR

METELIN, Yu. P., MUKHACHEV, G. A.

"Some Results of an Experimental Study of the Process of Condensation of Water Vapor in a Laval Nozzle"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike, Leningr. tekhnol. in-t kholodil'n. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160 (from RZh-Furbastroyeniye, No 8, Aug 70, Abstract No 8.49.23)

Translation: The kinetics of condensation of superheated steam is studied on fourteen flat transparent models of a Laval nozzle of various profiles. Visual observation and photography revealed the qualitative flow pattern, and gave a basis for explaining the blurred boundaries for transition to the region of condensation, which depend on the input parameters of the flow and the nozzle profile. Measurements of the static pressure along the channel made it possible to determine the amount of supercooling (super-saturation) of the steam, and to estimate the effect of condensation on the flow parameters in the form of characteristic curves for the variation in

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USSR

MEYELIN, Yu. P., MUKHACHEV, G. A., Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti, Leningrad, 1970, pp 155-160

static pressure, and the dimensions and location of the transition zone with respect to the length of the nozzle. Empirical relationships are proposed for determining the location of the zone of condensation and the mass fraction of moisture as time changes. Optical measurements (determination of the coefficient of scattering of the two-phase medium) were used to find the change in dimensions and the concentration of drops lengthwise of the nozzle, which agrees satisfactorily with the classical liquid-drop theory of nucleation. Two illustrations, bibliography of six titles. L. P. Kallistova.

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USSR

METELIN, YU. P., MUKHACHEV, G. A.

"Some Results of an Experimental Study of the Process of Water Vapor Condensation in a Supersonic Nozzle"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodiln. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11B461)

Translation: Experimental studies of the kinetics of condensation of supercooled vapor were performed in Laval nozzles of different shape with flat transparent walls. The condensation process was investigated by three methods: visual observation and photography, measurement of the static pressure along the channel and by the optical method by means of which the dispersion coefficient of two-phase medium was measured. The curves for variation of the static pressure, drop size and mass fraction of moisture along the length of the nozzle are presented. It is noted that the beginning of condensation is characterized by the variation of the static pressure curve, and the moisture drop size and drop concentration

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USSR

METELIN, YU. P., et al., Tr. Vses. nauchno-tekhn. konferentsii po termodynamike. Leningr. tekhnol. in-t kholodiln. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics, Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160

essentially depend on the saturation state parameters. The results obtained (with respect to number of drops) agree satisfactorily with the classical drop theory of nucleation.

2/2

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1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--EFFECT OF CARBOCROMEN ON SOME PARAMETERS OF MYOCARDIAL METABOLISM

-U-
AUTHOR--(02)--SHARGORODSKIY, B.M., METELITSA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ARZHEIM., FENSCH. 1970, 20 (3A), 448-9

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, METABOLISM, DGG, ARTERY, DRUG EFFECT,
CARDIOVASCULAR DRUG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NU----FD70/605015/F01 STEP NU--GY/0000/70/020/003/0448/0449

CIRC ACCESSION NO--AP0140631

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTACT DOGS WERE I.V. INJECTED WITH 0.8-1.0 MG CARBOCROMEN-KG. AFTER A SHORT REDN. OF MYOCARDIAL PO SUB2 AND REDOX POTENTIAL, LASTING FOR 1-2 MIN, AN INCREASE OF PO SUB2 LASTING FOR 15-20 MIN, WAS OBSD., WHILE THE REDOX POTENTIAL RETURNED TO NORMAL. WHEN PO SUB2 WAS DECREASED BY LIGATION OF THE LEFT DESCENDING CORONARY ARTERY, CARBOCROMEN WAS NOT CAPABLE OF RAISING THE PO SUB2.

FACILITY: LAB. PATHOPHYSIOL. MYOCARDINFARKTES, A. L. MYASNIKOV
CARDIOLOG. INST., MOSCOW, USSR.

UNCLASSIFIED

Cardiovascular Diseases

USSR

UDC 616.127-005.3-036.1(179.3)

M
KOKURINA, YE. V., OLASUNOV, I. S., and MITELTSA, V. I., Institute
of Cardiology Imeni A. L. Myasnikov, Academy of Medical Sciences
USSR

"Value of Mail Questionnaires in Epidemiological Investigations"

Moscow, Kardiologiya, No 2, 1970, pp 124-128

Abstract: Rose's standard questionnaire for the detection of angina pectoris resulting from exertion was mailed to a representative group of 500 males, 30-59 years of age, living in the central area of Moscow. Angina was diagnosed in 5.4% of the cases according to "strict" criteria and in 12% of the cases according to "loose" criteria. Some 60% of the positive responses according to "strict" criteria corresponded to the findings of a physical examination including EKG, performed by a physician. Among those detected according to "loose" criteria, i.e., individuals with atypical location of the pain, symptoms of angina caused by exertion were found in 27.5% of the cases. EKG signs of ischemic heart disease were observed in 23.5% of the individuals who responded positively to the questionnaire. according to "strict" criteria.

1/1

USSR

UDC 619:614.9-07:543.544:637.2+637.5

ZABOLOTNYY, K. F., METELITSA, V. K., and NEPOKLONOV, A. A., All-Union Scientific Research Institute of Veterinary Sanitation

"Detection of Phthalophos in Milk and Fat by Thin-Layer Chromatography"

Moscow, Veterinariya, No 5, May 71, pp 103-104

Abstract: A method for determining residual amounts of pathalophos in milk and fat was developed, using thin-layer chromatography with alumina and gypsum in a ratio of 93:7. The extraction is done with acetone and chloroform. The chromatographic system used consists of a mixture of hexane and methanol (19:1). The chromatogram is produced by spraying with a 20% aqueous alkali solution and a 1% aqueous solution of silver nitrate. Pathalophos appears in the form of dark-grey needles with Rf 0.62. The sensitivity of the method is 1 microgram per sample. Since sanitary rules do not permit the presence of phtaalophos in milk and fat, the compound cannot be recommended for use on dairy animals. In the case of slaughter animals, the test must be run not earlier than 20 days after treatment of the animals with phthalophos.

1/1

USSR

UDC: 621.317.3(088.8)

KARAU'NIK, M. Ye., MAKEYEV, V. I., ALEKSANDROV, A. F., LEBEDEV, B. M.,
METELITSIN, I. V., PLATONOV, F. V., FEDIN, V. F.

"A Device for Measuring the Electrical Parameters of Piezoelectric Resonators"

USSR Author's Certificate No 264547, filed 5 Jul 68, published 17 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A315 P)

Translation: It is pointed out that conventional devices for measuring the electrical parameters of piezoelectric resonators do not allow for direct measurement of piezoelectric current. In the proposed device there is a special coil with an auxiliary indicator whose scale is graduated in piezoelectric current values. The resonator to be tested is placed inside the coil. E. L.

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1/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF DIAMOND BURNISHING ON THE QUALITY OF CHROMIUM COATINGS
-U-
AUTHOR--(03)-METELKIN, A.F., KHVORDSTUKHIN, L.A., MASHKOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--MASHINOSTROENIE, NO. 3, 1970, P. 147-151.
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--DIAMOND, CHROMIUM, METAL COATING, SURFACE PROPERTY, WEAR
RESISTANCE, METAL POLISHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1400

STEP NO--UR/0418/70/000/003/0147/0151

CIRC ACCESSION NO--AP0130358

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130358

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE CHARACTERISTICS
FEATURES OF DIAMOND BURNISHING AND ITS INFLUENCE ON THE WEAR RESISTANCE
AND CONTACT ENDURANCE OF CHROMIUM COATINGS. AN ANALYSIS OF THE
GEOMETRICAL SURFACE QUALITY PARAMETERS LEADS TO RELATIONS BETWEEN THE
TRANSVERSE AND LONGITUDINAL SURFACE ROUGHNESSES AND THE BURNISHING
CONDITIONS. EXPERIMENTAL DATA CONCERNING SURFACE HARDENING AND RESIDUAL
STRESSES INDUCED IN THE SURFACE LAYER BY DIAMOND BURNISHING ARE
EXAMINED. THE SUPERIORITY OF A DIAMOND BURNISHED CHROMIUM COATINGS OVER
COATING SUBJECTED TO OTHER TYPES OF SURFACE TREATMENT IS DEMONSTRATED.

UNCLASSIFIED

USSR

UDC: 621.791.3

POZDEYEVA, N. V., CHIBIREVA, V. A., METELKIN, I. I., KOVALEVSKIY, R. Ye.,
PERSHINA, L. K., Moscow

"Soldering of Metallized High-Alumina Ceramics with Metals by Means of Copper-
Germanium Solder"

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of
Materials Processing], No 6, Nov-Dec 73, pp 104-110.

Abstract: Data are presented from a study of the interaction of copper-
germanium solder containing from 5 to 10 wt. % germanium with the molybdenum-
manganese metallization coating on a high-alumina ceramic, type 22KhS, dur-
ing the process of soldering with various structural metal alloys. In rela-
tionship to the metallization coating, the most active element in combination
with copper-germanium solder is nickel, which facilitates rupture of the
metallization layer, thus reducing the quality of joints produced. Recom-
mendations are given for the selection of a protective coating for the
metallization layer as a function of the structural metal used. If the
ceramic is to be soldered to alloys containing nickel, the metallization
surface should be protected with a galvanic layer of copper.

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USSR

UDC 549.517.11.546.821

ZHMUD', YE. S., SHMELEV, A. YE., and METELKIN, P. N.

"Interaction of Titanium with a Highly Aluminous Ceramic"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 7], pp 1798-1801

Abstract: VT-1 titanium and A-995 ceramic material were used to study the products of interaction between titanium and the ceramic which consisted of 99.5% Al_2O_3 and 0.5% MgO with the effect of the MgO on the $Ti-Al_2O_3$ not considered in order to simplify the investigation. The reaction products are situated in the metallic portion of the layer bond in which their number, thickness, structure microhardness, and composition depend on temperature. In the bonds between the two materials, two layers are formed near the ceramic: the intermetallide TiAl with some oxygen content and a solid solution (Ti(Al, O)). These layers form at 1150-1450°C while at 1550-1600°C only the solid solution forms. The middle portion of the metal is the solid solution which forms independently of the temperature at which the studied alloys were produced. The oxides of titanium, sub-compounds of Ti-O and Ti-Al, as well as free aluminum were not detected in the investigated bonds. Four figures, one bibliographic reference.
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USSR

UDC: 661.327.12

KONOVALOV, V. N., ZORICH, Ye. M., ~~MEDELKIN, Ye. V.~~, State Scientific
Research Institute of Civil Aviation

"A Data Input Device"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 30, Oct 71, Author's Certificate No 317057, Division G, filed 8 Dec 69,
published 7 Oct 71, pp 172-173

Translation: This Author's Certificate introduces a data input device
which contains a control register connected to a tape-transport mechanism.
This register is also connected through an AND circuit to a recording and
reproducing module. The device also contains a mode-setting module, a
delay module, and logic elements. As a distinguishing feature of the patent,
the operational reliability of the device is improved by adding a beginning-
-of-cycle circuit and an end-of-cycle circuit. The inputs of these cir-
-uits are connected through the time delay module to the control register
and the mode-setting module, which is connected through an AND circuit to
the beginning-of-cycle and end-of-cycle circuits and to the recording and
reproducing module.

1/1

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USSR

UDC 621.385.032.53:666.595.81/.82:621.385.032.71

SKAL'SKAYA, V.P., ~~MAZELKIN, L.I.~~

"Effect Of Technological Factors In The Production Of Metalceramic Units On The Formation Of Small Leaks In Them"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 8, 95-101 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A11C)

Translation: The paper considers the effect of manufacturing methods on the formation of small leaks in metalceramic units produced by soldering methods with the aid of active metals, thermocompression welding, and soldering of metallized ceramics by hard solders. The investigations show that with megatrons and ion-desorption pumps it is possible by an increase of the partial pressure of argon in the storage process to fix small leaks in systems with metalceramic units. Metalceramic units produced with the use of titanium have different rates of leakage as a function of the soldering temperature. With the use of PSp72 solder, the soldering temperature must be 850--880° C, and the exposure time 5 min. Departure from the optimum soldering temperature and exposure time leads to the appearance of small holes in the metalceramic units. In metalceramic units produced by soldering metallized ceramics in

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SKAL'SKAYA, V.P., et al., Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh, 1970, No 8, pp 95-101

advance, the exposure time must amount to ≤ 2 min. An increase of this time lead to an increase of the leakage rate of products during their storage and warmups. Change of the temperature, exposure time, and pressure during thermocompression welding within the limits 1000--1050° C, 10--30 min, and 1.5--1.8 kg/mm², respectively, do not affect the quality of metalceramic units. Metalceramic units produced in an optimum regime of soldering or welding, with storage during the course of a year and periodic warmups, do not have slow leaks within the limits of response of the method. 6 ill. 7 ref. G.B.

2/2

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USSR

UDC: 577.4

METESHKIN, A. A., Ryabukha, N. D.

"Division of States of Automata Being Tested into Subsets"

Pribory i Sistemy Avtomatiki. Resp. Mezhd. Temat. Nauch.-tekhn. Sb. [Automation Systems and Devices], 1972, No 24, pp 82-89 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V360)

Translation: Methods of subdivision of states of automata being tested into subsets are studied. A method for subdivision is suggested, as well as expressions for calculation of test effectiveness, which can be used to plan systems for testing of computer devices.

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USSR

UDC 577.4

METESHKIN, A. A., RYABUKHA, N. D.

"Separation of the States of a Controlled Automaton Into Subsets"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
(Automation Devices and Systems. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 24, pp 82-89 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V360)

Translation: Methods for separating the states of a controlled automaton into subsets are investigated. A separation method and also an expression for calculating the effectiveness of the control are proposed which can be used in designing systems for the control of computer elements and devices. Authors abstract.

1/1

USSR

UDC /576.8.097.29:582.288/:631.547.1

METEYKO, T. Ya., and BRYUKHINA, I. P., Institute of Microbiology and Virology, Academy of Sciences Ukr SSR

"The Effect of Mycotoxins on the Carbohydrate Content in Plant Seedlings"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 4, Jul/Aug 71, pp 489-492

Abstract: Changes in the content of monosaccharides, disaccharides, and total sugars in the stalks and roots of 8-day old plants of winter wheat, corn, oats, soybeans, peas, and beans under the action of fusarin and dendrodochin were studied. Toxins in amounts of 10-1500 gamma were introduced through the roots together with Knop nutrient solution. Dendrodochin had a more pronounced effect on the carbohydrate metabolism and the sugar content than fusarin. Under the effect of dendrodochin the sugar content in corn stalks increased, while decreasing in the stalks of oats. In leguminous plants dendrodochin increased the sugar content of the stalks while reducing that of the roots. It acted mainly on the content of monosaccharides in legumes and on the levels of both monosaccharides and disaccharides in corn and oats. Fusarin reduced the sugar content in wheat roots and oat stalks, while increasing it in oat roots. In amounts of 1000-1500 gamma, fusarin stimulated the carbohydrate metabolism in both the stalks and

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USSR

UDC [576.8.097.29:582.23/581.142

BRYUKHINA, I. P., and METEYKO, T. YA., Institute of Microbiology and Virology
Academy of Sciences URSSR

"Effect of Fungal Toxins on Seed Germination and Growth of Plant Sprouts"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 211-214

Abstract: Experimental results are reported of study of the phytotoxic effect of *Dendrodochium toxicum* and *Fusarium sporotrichiella*. To obtain the toxins, *Dendrodochium* was cultivated on sterile straw, and *Fusarium* on sterile oats. In doses of 10-100 μ g, *Ditoxicum* toxin inhibited the growth of oat, wheat, corn and pea sprouts. The effect of *F. sporotrichiella* varied with type of plant studied; low concentrations -- 10-100 μ g -- stimulated growth of wheat sprouts, while inhibiting development of oat sprouts. Legumes were more resistant to the effect of mycotoxins, only higher doses -- 250 μ g for *Ditoxicum* and 500-1000 μ g for *D. sporotrichiella* toxin -- resulted in definite phytotoxic action. The inhibitory effect of the mycotoxins affected mostly the plant root system. Seed germination was considerably depressed by a single treatment of 50-500 μ g of *Dendrodochium* toxin and 100-1000 μ g of *Fusarium* toxin.

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USSR

UDC: 621.374.35

MIRONOV, V. M., METKIN, N. P., Leningrad Institute of Aviation Instrument Building

"A Method of Shaping Random Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334634, Division H, filed 27 Nov 70, published 30 Mar 72, p 199

Translation: This Author's Certificate introduces a method of shaping random signals by linear conversion of a normally distributed noise-like signal. As a distinguishing feature of the patent, in order to obtain several random signals with arbitrary laws of distribution and controllable mutual correlation function, the noise-like signal is normalized with respect to variance after linear conversion, and then subjected to nonlinear conversion.

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USSR

METEL'SKIY, N. N.

"The Problem of Equivalence of Problems of Discrete Optimization"

Izv. AN BSSR. Ser. Fiz.-Mat. N. [News of Academy of Sciences, BSSR, Physics-Mathematical Sciences Series], 1973, No 1, pp 5-9 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V332, by the author).

Translation: The set M of pairs of the form (A, f) is studied, where A is a finite or denumerable set, f is a real-valued function defined in A . A certain relationship of equivalence is introduced to set M , while a relationship of partial order is introduced in the corresponding factor set \mathcal{M} . A number of properties of sets M and \mathcal{M} are established. Appendices are given for problems of optimization of functionals in sets of permutations.

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USSR

UDC 621.317.59.551.756

RAZIN, K. A., Candidate of Technical Sciences, METLITSKIY, R. S., KABIN, Yu. Ya., LYUBESHKIN, V. P., AND MARTYNOVA, Ye. Ye., Engineers

"The Densimeter of the "Venera-5" and "Venera-6" Space Stations"

Pribory i Sistemy Upravleniya, No 10, 1971, pp 39-40.

Abstract: A description, drawing, block diagram, schematic diagram and photograph are presented of the densimeter used on the "Venera-5" and "Venera-6" spacecraft. The device is based on the method of measurement of gas density consisting in that a body is placed in motion in the medium whose density is to be measured and the aerodynamic resistance or drag of the gas, which is a function of density, is determined. In the vibration densimeter described, the moving bodies consisted of the arms of a continually excited tuning fork. The oscillating amplitude of the arms was inversely proportional to the aerodynamic drag, and the high Q of the tuning fork allowed good sensitivity of the device to be achieved. The device can measure densities from 0.5 to 45 kg/m³ in the 0-350°C temperature interval with an error of not over ±10%. Its indications are independent of gas composition. Calibration of the densimeter is described. As the example of the operation of the densimeter, tables are presented of the measurement data produced from the "Venera-5" spacecraft as it descended on Venus.

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USSR

UDC 621.387.5

VORONCHEVA, V.R., MAKAR-LIMANOV, G. YE., METLITSKIY, YU. YU. - (Moscow Electrovacuum Devices Plant)

"Glow-Discharge Indicator Thyatron"

USSR Author's Certificate No 254663, filed 4 Apr 68, published 17 Mar 70 (From RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A142P)

Translation: A glow-discharge thyatron intended for information readout without breakdown is patented. Inside the container for the device there are arranged in series the cathode, three grids, and the recording anode in the form of an extended plate with a hole laterally offset in relation to the hole for the first grid. The solid plate of the recording anode shields from the observer both the luminescence of the preparatory discharge and the luminescence of the recording anode. The readout anode, which is placed behind the recording anode, can be made in the form of a disk located perpendicular to the surface of the recording anode, or in the form of a pin [shtyr'], or a ring. The readout anode is offset to the side of the hole in the recording anode. Reading of information is accomplished by the admission of signals to the readout anode, during which firing of the discharge only takes place with the existence of a discharge at the recording anode. Quenching of the discharge is achieved because of pulse supply. I.V.

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USSR

UDC 621.791.046:669.136.8

GRETSKIY, Yu. Ya., METLITSKIY, V. A., Institute of Electric Welding, imeni Ye. O. Paton, Acad. Sci. UkSSSR

"Mechanized Welding and Surfacing of Cast Iron with Spheroidal Graphite Using a Powder Wire"

Avtomaticheskaya Svarka, No 10, 1971, pp 36-38.

Abstract: A new method has been developed for surfacing of cast iron with spheroidal graphite using arc welding with a powder wire of a new composition. The basic advantage of this method is that cast iron with spheroidal graphite and ferrite-pearlite metal base is produced consistently in the surfaced metal and transition zone. This is achieved by introduction of graphitizing elements (carbon and silicon) plus complex modifiers capable of globurization of the graphite inclusions to the composition of the wire. The use of the new powder wire also has allowed mechanization of welding of high-strength cast iron for the first time. The use of the new mechanized method for welding and surfacing of high-strength cast iron with spherical graphite allows the yield of useable cast products to be increased and allows a technology of manufacture of welded-cast products of this metal to be developed.

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USSR

UDC 678.06:678 (29.5:669:678.742.2)01:53

KALNIN', M. M., KARLIVAN, V. P., METRA, A. YA., SOBOLEVSKIY, CH. A., MALEBS, I. YA., DZENIS, M. YA., KRAGIS, I. ZH., and REYKHMANTIS, P. K.

"Metalloplastics Based on Modified Polyethylene"

Moscow, Plasticheskiye Massy, No 10, 1972, pp 31-33

Abstract: The technological process of the production of metalloplastics is based on thermal contact [plating] between a pretreated metal base and a film of modified polyethylene. Optimal ranges of the important parameters influencing the properties of metalloplastics are as follows: temperature of thermal contact -- 200-250°C; duration of the contact -- 30-60 sec; filler content -- 8-10 vol-%. The surface of the metal base is cleaned, preheated and passed through a set of rollers where the initial contact with modified polyethylene is made. Final bonding occurs in an induction heating chamber. The material obtained -- the unilateral or bilateral metalloplastic -- shows high anticorrosive properties. It can be processed by several methods such as bending, folding, or die stamping. Surfaces can be joined together by welding or folding, and other methods. This material is ideally suited for production of equipment resistant to chemical agents, such as storage or sedimentation tanks. It could be used for production of special pipe lines, ventilation systems, etc. Due to 1/2

USSR.

KALNIN', M. M., et al., *Plasticheskiye Massy*, No 10, 1972, pp 31-33

the ability of producing colored surface coatings, it could also be used in automobile, airplane or ship building industry as well as for construction of furniture or specialized equipment.

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USSR

UDC: 51.621.391

METRA, I. A.

"A Stochastic Counter"

V sb. Veroyatnostn. avtomaty i ikh primeneniye (Probabilistic Automata and Their Use--collection of works), Riga, "Zinatne", 1971, pp 33-36 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V689)

[No abstract]

1/1

- 27 -

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--APPARATUS FOR PRODUCTION OF SUBCELLULAR MATERIAL -U-

AUTHOR--(03)-METREVELI, L.I., KHUKOV, V.D., CHIMISHKYAN, K.L.

COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,181,916

DATE PUBLISHED--18FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC LABORATORY, PATENT, LABORATORY EQUIPMENT, CELL
PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1381

STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0121861

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIKC ACCESSION NO--AA0121861

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD FOR PREPG. SUBCELLULAR MATERIAL FROM BIOL. TISSUES IS DESCRIBED. THUS, BIOL. CELLULAR MATERIAL IS SUBJECTED TO A PRESSURE OF 50 ATM IN A VESSEL AND THE PRESSURE IS RELEASED SUDDENLY BY PERMITTING THE MATERIAL TO ESCAPE THROUGH AN OUTLET MEASURING AT LEAST 0.5 MM ACROSS. THIS RESULTS IN SUBCELLULAR PREPNS. WHICH SHOW LITTLE DENATURATION AND ARE SUBSTANTIALLY FREE FROM WHOLE CELLS. THE OUTLET IS A SPIRAL TO PERMIT SEPN. OF THE MATERIAL FROM THE GAS USED TO CREATE THE PRESSURE. FACILITY: MOSCOW SCIENTIFIC RESEARCH INSTITUTE OF VIRUS PREPARATIONS.

UNCLASSIFIED

USSR

UDC 536.531

KULOV, V. S., STAROSEL'TSEVA, S. P., and METREVELI, S. G.

"High-Resistance Indium Phosphide Thermistors"

Leningrad, Izvestiya VUZ -- Priborostroyeniye, No. 7, 1971, pp 135-136

Abstract: The authors, associated with the North Osset University, present the results of tests made on thermistors they synthesized and for which they claim characteristics better than the ST1-18 cobalt-manganese thermistors thought to be the best in the Soviet Union. The high-resistance material they used was made by introducing a compensating impurity, copper, into the InP melt; it has a resistivity of about 10^7 ohm-cm and has n-type conductivity. The ohmic contacts are made of lead. Curves are given for the thermistor resistance as a function of the temperature, and for the static volt-ampere characteristic of the thermistor in undisturbed air. The device can be used with reliability at temperatures above 100° C.

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USSR

UDC 536.531

KULOV, V. S., STAROSEL'TSEVA, S. P., and METREVELI, S. G., Severo-Osetinskiy State University

"Thermistors of High-Resistance Indium Phosphide"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 14, No 7, 1971, pp 135-136

Abstract: The authors suggest using high-resistance indium phosphide, neutralized with copper, as the material for producing thermistors. The experimental thermistor samples prepared of InP have a thermal coefficient of resistance $\alpha \approx 12\%/deg$ at room temperature and $\alpha = 6\%/deg$ at $150^\circ C$.

The authors further describe the experimental set up and cite the results; these are shown on two schematics. Figure 1 depicts the thermistor resistance versus temperature and Figure 2 gives the static volt-ampere characteristics of the thermistor in an atmosphere of calm air. The article contains 2 figures.

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USSR

UDC 621.315.592.3:669.872'779

STAROSEL'TSEVA, S. P., METREVELI S. G., KULOV, V. S.

"Technological Process for Obtaining p-Type Indium Phosphide"

Tr. Sev.-Kavkaz. gornometallurg. in-ta (Works of the Northern Caucasus Mining and Metallurgical Institute), 1970, vyp. 28, pp 59-60 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G502)

Translation: Alloying the initial InP with n-type conductivity by admixtures of Zn, Cd, and Mg was carried out both in the process of crystal growth by the zone melting method and by diffusion. The crystal growth rate was 10 mm/hour. Large-block ingots with a hole concentration up to $8 \cdot 10^{18} \text{ cm}^{-3}$ are obtained by crystallizing a melt of InP of stoichiometric composition. By diffusion of radioactive Zn^{65} it is demonstrated that the solubility of the Zn in InP reaches $10^{20} - 10^{21} \text{ cm}^{-3}$. Part of the Zn is present in the form of neutral atoms. This leads to an anomalously low value of the mobility of the charge carriers in strongly alloyed InP ($10 - 20 \text{ cm}^2/\text{volt-second}$ at 77° K). Moderately alloyed samples of InP ($5 \cdot 10^{16} - 8 \cdot 10^{15} \text{ cm}^{-3}$) have high hole mobility of $1,200 \text{ cm}^2/\text{volt-second}$ at 77° K . It is demonstrated by the method of x-ray spectral analysis that InP crystals grown from a melt are stoichiometric.

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Steels

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UDC 539.67

TAVADZE, F. N., ZOIDZE, N. A., BADZOSHVILI, V. I., MEHREVELI, V. SH., and GARIKASHVILI, V. I.

"The Effect of Boron on the Internal Friction and Mechanical Properties of CONGVR Steel"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 132-134

Abstract: It is shown that the addition of boron to CONGVR steel leads to an increase in strength, and reinforces the effect of heat treatment on "heredity." In samples containing boron, a preliminary deformation at room temperature increases the strength and yield stress after the α - β - α transformations.

It is assumed that an increase in mechanical properties is related to the effect of boron on the formation of steel substructure. Certain recommendations are given on the practical use of boron for strengthening the effect of heat treatment on the "heredity" of alloyed steels. 2 figures.

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173 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--INTERNAL FRICTION OF IRON BORON ALLOYS -U-
AUTHOR-(05)-~~METREVELI, Y. SH.~~, TSAGAREYSHVILI, G.V., MIKELADZE, A.G.,
ZOIDZE, N.A., DARSVELIDZE, G.SH.
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CIRC ACCESSION NO--APO049427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERNAL FRICTION WAS INVESTIGATED OF PURE FE, CRYST. B, AND FE-B ALLOYS AFTER VARIOUS THERMAL TREATMENTS. INTERNAL FRICTION WAS MEASURED ON WIRE SPECIMENS (0.75-0.8 MM IN DIAM. AND 100 MM LENGTH) WITH DIRECT AND INVERSE TORSION PENDULUM IN A PERMANENT MAGNETIC FIELD OF 300 OE AT TEMPS. MINUS 190-600DEGREES IN AN INERT ATM., OR AT 10 PRIME NEGATIVE 4 TORR. INTERNAL FRICTION OF ANNEALED FE (300 HR AT 700DEGREES IN WET H) DEPENDS LITTLE ON TEMP. AT MINUS 190-70DEGREES. ONE PEAK AT MINUS 75DEGREES WAS OBSD. TWO WEEKS HOLDING AT ROOM TEMP. DID NOT EFFECT THE HEIGHT OF THE PEAK. THE PEAK IS REMOVED BY HEATING TO 150DEGREES. WHEN FREQUENCY IS INCREASED 1-3.5 HZ, THE PEAK SHIFTS SIMILAR TO 12DEGREES. FROM THE PEAK SHIFT THE ACTIVATION ENERGY WAS DETD. AS 6.4KCAL-MOLE. DURING INVESTIGATION OF TEMP. DEPENDENCE OF INTERNAL FRICTION OF B, A PEAK AT 260DEGREES WAS REVEALED. ACTIVATION ENERGY DETD. FROM TEMP. SHIFT WAS 20 PLUS OR MINUS 2KCAL-MOLE. IN FE SPECIMENS CONTG. 0.004-0.016PERCENT B THE PEAK OF INTERNAL FRICTION WAS AT 40DEGREES. DEPENDENCE OF INTERNAL FRICTION ON B CONTENT IN FE-B ALLOYS WITH GRAIN SIZE 70-100 AND 10-20MU IS GIVEN. TEMP. DEPENDENCE OF INTERNAL FRICTION OF A SPECIMEN CONTG. 0.2PERCENT B IS GIVEN.

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CIRC ACCESSION NO--A00049427

ABSTRACT/EXTRACT--ON A SPECIMEN QUENCHED FROM 720DEGREES 2 PEAKS WERE OBSD.: ONE AT 40DEGREES, AND THE OTHER AT 340DEGREES. AFTER ANNEALING AT 500DEGREES, THE LOW TEMP. PEAK DISAPPEARED, THE HEIGHT OF THE HIGH TEMP. PEAK REMAINED UNCHANGED. TEMP. DEPENDENCE OF INTERNAL FRICTION OF THE SAME SPECIMEN BUT STRAINED TO 10-15PERCENT DEFORMATION AND ANNEALED AT 500DEGREES REVEALED A PEAK AT 240DEGREES, THE PEAK AT 340DEGREES WAS INCREASED. THE ORIGIN OF 40DEGREES PEAK IS ASSOCD. WITH MIGRATION OF INTERSTITIAL B ATOMS UNDER STRAIN. B DISSOLVES IN ALPHA FE AND GIVES MAX. OF INTERNAL FRICTION AT 40DEGREES. THIS MAX. IS INCREASED WHEN B CONTENT IN FE IS INCREASED; BUT DECREASES WHEN THE BORIDES APPEAR IN THE STRUCTURE. IT SEEMS THAT BORIDES ENHANCE PPTN. OF B ATOMS FROM SOLID SOLN. THE PEAK AT 240DEGREES CAN BE EXPLAINED BY INTERACTION OF DISLOCATIONS WITH B ATOMS; THE MAX. INTERNAL FRICTION AT 340DEGREES IS RELATED TO OCCURRENCE OF BORIDES.

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USSR

UDC: None

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YERUKHIMOVICH, Yu. A., ZEMIN, S. N., and METRIKIN, A. A.

"Two-Reflector Antenna for Radio Relay Communications"

Moscow, Antenny, No. 7, 1970, pp 3-21

Abstract: The results of experimental tests on a new double reflector antenna with a shifted focal axis, designed according to recommendations of the International Radio Consultative Committee (MKKR) for radio relay lines, are presented and analyzed. A discussion is given of the basic system and characteristics of antennas of the shifted focal axis type. An expression is given for the gain factor, and the directional diagram of the antenna is plotted. Also plotted from the latter are curves showing the variation of the integral energy distribution in the E and H planes with respect to the antenna axis angle. These curves show that, within the limits of the main lobe ($\pm 10^\circ$), the radiated energy in the H plane amounts to 73.4% of the total energy radiated, while in the E plane the radiated energy amounts to 56.8%. Cross-sectional diagrams of the antenna showing its structure and dimensions are given, and photographs of an elliptical reflector and the antenna itself are shown. The authors assert that the antenna has high electrical parameters despite the simplicity of its construction, and that it is

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YERUKHINOVICH, Yu. A., et al, Antenny, No. 7, 1970, pp 3-21

valuable for satellite as well as earthbound radio relay communication. They conclude by thanking Engineer Yu. B. Buzuyev, who conducted the experimental work.

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METSAVEER, E. YA.

"Scattering of Waves by Elastic Spherical Envelopes in an Acoustical Medium"

Izvestiya Akademii Nauk Estonskoy SSR, Fizika, Matematika, Vol 19, No 4, 1970, pp 415-422

Abstract: The method of the Watson transform is used to study the scattering of the pressure wave (echo) from elastic spherical shells. The contributions of individual modes to the total echo at the point of the source, located far from the shell, are determined. It is demonstrated that with extremely long incident waves (wave length over 8-10 times greater than shell thickness) the only elastic wave to make a significant contribution to the echo is the first symmetrical oscillating form. With shorter waves, the influence of the first axisymmetrical form increases rapidly.

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